

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Vasel et al.

Serial No.: 08/751,709

Filed: 11/18/96

For: NON-LETHAL PROJECTILE FOR
DELIVERING AN INHIBITING
SUBSTANCE TO A LIVING TARGET

Group Art 3641
Unit:

Examiner: Tudor, H.

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Sir:

I, Charles S. Heal, declare as follows:

1. That I have over 23 years in law enforcement and have worked assignments in patrol and undercover assignments, narcotic suppression, gang suppression, dignitary protection, emergency and special operations.

That I am currently assigned to the Special Projects Group of the Los Angeles Sheriff's Department, with responsibilities in "Technology Exploration." As part of these duties, I regularly identify, evaluate and assist in developing new technologies for law enforcement applications.

That I am frequently called upon for my opinions, suggestions, criticisms and ideas for the development of new products and technologies for law enforcement applications and to assist in their appeal and marketing to law enforcement agencies.

That I have held successively more responsible positions and assignments including line level, investigative, supervisory and management positions in a variety of law enforcement functions.

That I have six certificates from California Commission on Peace Officer's Standards and Training, including the Basic, Basic Specialized (Investigation), Intermediate, Advanced, Supervisory and Management Certificates.

That I have served as a consultant to California Commission on Peace Officer Standards and Training in law enforcement related subjects and continue to do so.

That I have served as a consultant for the State of California Governor's Office of Emergency Services in law enforcement related subjects.

That I am currently serving as a consultant to the U.S. Department of Justice on law enforcement related subjects.

That I have four college degrees and have authored two books and more than forty published articles in law enforcement and tactical related subjects.

That I have co-authored or contributed one additional book on law enforcement and military related subjects and am a featured columnist for *The Tactical Edge* magazine, published by the National Tactical Officers Association.

That I have been the recipient of the National Tactical Officer's Association's Award for Excellence in 1989 and awarded a life-time membership in 1994.

That I have received more than ninety written commendations for law enforcement operations and activities, including Letters of Appreciation from the U.S. Department of Justice (FBI), U.S. Department of Treasury (ATF), Office of the State Attorney in Florida and California Commission on Peace Officer Standards and Training.

That I have trained and lectured throughout the United States and several countries on law enforcement subjects including tactics, civil disorders, nonlethal options and others.

That I am a founding member of the Institute for Defense Technologies at Pennsylvania State University, College Park, Pennsylvania.

That I have been a featured Speaker at the 1st International Nonlethal Conference, London, England, Nonlethal Defense Conference I, Washington D.C., as well as Johns Hopkins University, Laurel, MD, Pennsylvania State University, College Park, PA, and McKenna College, Claremont, CA

That I have testified as an expert in federal, state and municipal courts in law enforcement related subjects, including narcotics and police special operations.

My resume is attached as Exhibit A and my curriculum vitae is attached as Exhibit B

2. I am familiar with the use of inhibiting substances in non-lethal weapons. Non-lethal weapons are used to stop a suspect where a lethal weapon is not warranted. I have tested many devices that use a variety of ingredients including CS, CN and OC, as well as various smokes, liquids and dust which are intended to inhibit, stun or otherwise stop a target.

3. There is a widely known need for a non-lethal device that can be projected at a person (or other target) to aid in stopping a target. The need is for a device that is easy to use and acts quickly.

4. Most law enforcement officers carry a liquid pepper spray canister and a firearm. The firearm is lethal, and thus is always a last resort. Liquid pepper spray canisters require close proximity to the intended target and thus can only be used under limited circumstances.

6. I have reviewed a number of patents that were cited by the examiner related to the present invention. They are all different in one way or another, even if combined.

7. The Abbott patent is a shot gun shell loaded with a projectile with fins. The projectile is filled with a liquid agent for disabling a suspect. It requires a shot gun to shoot it. Except under the most extraordinary circumstances, officers do not pursue a suspect with a shot gun. Dispersal must be done against a wall or through a window. While this allows it to be viable for more general applications, such as filling a room with a substance, it is not adequate for stopping a single individual. Because the projectile is strong and rigid enough to penetrate auto safety glass, it might seriously injure or kill a person who is struck with it.

8. The Ludaesher patent is for a device that attaches to a pistol for spraying tear gas or liquid pepper spray from the end at the suspect. It is limited in range and requires an officer to close with the suspect. This requires the officer to accept substantially more risk. The Vasel device uses a powdered version of O.C. (Oleoresin Capsicum) and gives it different capabilities, including an extended range.

9. The Pinkney patent appears to be similar to the current Mace spray that some agencies employ. The patent describes the use of a liquid substance shot out of a conventional pressurized aerosol container. Again, the Vasel device employs a powdered version of O.C. which gives it different capabilities.

10. The Kotsiopoulos patent describes a two piece paint ball made from a special material that is impervious to water and does not dissolve. The ball is used for a variety of substances, all of them liquid. One of the problems with a liquid is that when the projectile impacts, most of the liquid continues along the flight path and has a narrow dispersal pattern. Since all commercially available chemical irritants and lacrimators require them to be ingested in some manner to be effective, this presents serious difficulties in striking an individual in such a manner that the chemical is effective but the person is not injured from the impact of the projectile. For example, the most effective use of liquid O.C. is in contact with the eyes, which requires an impact in close proximity. This is, at best, extremely difficult and likely to cause serious injury.

11. The Sloneker patent describes an improved paint ball gun used in combination with a paint ball having dimples on the surface. The dimples improve the range and accuracy of the ball but seem to be only surface dimples and are not used to help in the dispersion of the contents when it hits the target. The problem with liquid dispersal remains.

12. In review of the these patents, I do not see any combination of them that is quite similar to the invention of Vasel, et al.

13. I am familiar with the Vasel et al. patent application listed above, and in particular with the powder-filled version of the projectile they describe.

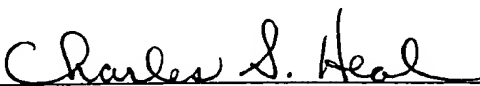
14. The powder filled device described in Vasel, et al's., patent application appears to be particularly effective in that the projectile is filled with an inhibiting powder, such as Oleoresin Capsicum that, upon impact with a living target, is released and quickly and effectively dispersed. The released powder forms a cloud or fog that surrounds the target, and is then inhaled by the target and/or gets into the target's eyes. The cloud then disperses quickly, allowing the law enforcement officer to apprehend the person without any special equipment (such as a mask or gloves).

15. The quick dispersal feature is particularly appealing to law enforcement and has been sought for many years. To my personal knowledge, the Vasel device is the first to adequately address this problem and I am not aware of another delivery system with these distinctive features.

16. The Vasel, et al. device alleviates the problem of poor dispersion. Further, it is likely to be more effective in that it provides a larger dispersal pattern when compared to similar liquid-filled projectiles. Since many law enforcement situations make accuracy difficult, this device tends to be more "forgiving" by remaining effective with projectiles which impact at less than the ideal proximity.

17. I am not aware of any other projectile devices on the market, or under development other than the Vasel, et al., device, that use an inhibiting substance in powder form. They are all liquid and, as such, have the same dispersal problems. This is in spite of the fact that powdered Oleoresin Capsicum has been commercially available for at least 15 years.

18. As I am advised I must, I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patents issuing thereon, or any patent to which this Declaration is directed.



Charles S. Heal

Dated: Jun 19, 1998

Attachments: Exhibit A – Resume
Exhibit B – Curriculum Vitae